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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,647	09/25/2003	Jeremy Ian Wilson	100201073-2	7880

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HEWLETT PACKARD COMPANY  
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EXAMINER

TA, THO DAC

ART UNIT PAPER NUMBER

2833

DATE MAILED: 03/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/671,647	Applicant(s) WILSON ET AL.	
	Examiner Tho D. Ta	Art Unit 2833	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,7-19 and 22-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,7-19 and 22-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

This application is a continuation of Application/Control Number 10/308,533, filed on 12/03/02, now U.S. Patent 6,676,417.

Applicant's cancellation of claims 4-6, 20 and 21 is acknowledged.

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 9-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolfe (6,309,223) in view of Yamaguchi et al. (6,095,840).

In regard to claims 9-11, 14, 15, Wolfe discloses a system for electrically interconnecting components, the system comprising: a flex cable 12 having a first end and a second end; a first connector 56 attached to and electrically communicating with the first end 24 of the flex cable 12; a second connector (not shown) attached to and electrically communicating with the second end of the flex cable (this is inherent); a first retention member 46A and a second retention member 46B extending outwardly from the flex cable, each of the first and the second retention members 46A, 46B having a post, the post having a first end located adjacent to the flex cable 12, the first and second retention members 46A, 46B are mounted adjacent to the first connector 56.

However, Wolfe does not disclose a cap is attached to the second end of the post, the cap including multiple segments, each of which extends outwardly from the

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second end of the post, each of the segments being deflectable toward the post in response to a biasing force. Thus, without a cap the flex cable 12 of Wolfe could become loose due to vibration.

Yamaguchi et al. discloses a more effective retention member 36 having a post 37 and a generally dome-shaped cap 38, the cap including multiple segments, each of the segments is generally triangle shaped, each of which extends outwardly from the second end of the post, and each of the segments being deflectable toward the post in response to a biasing force.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wolfe invention by using the retention member as taught by Yamaguchi in order to effectively retained the flex cable together with the connector, and thus the electrical connection will not be disrupted.

In regard to claim 12, Wolfe discloses a plate 42 mounted adjacent to the first connector 56, the first retention member 46A extending outwardly from the plate 42.

In regard to claim 13, Wolfe discloses means 44 for mounting the first retention member 46A adjacent to the first connector 56.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 7, 8, 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Daughtrey (5,133,667).

In regard to claim 1, Daughtrey discloses a system for electrically interconnecting components, the system comprising: a flex cable assembly having a flex cable 34, a first connector 52 and a retention member 36, the first connector 52 being attached to and electrically interconnected with a first end of the flex cable 34, the retention member 36 extending outwardly from the flex cable 34; a support structure 42 defining an orifice (a portion of 28 where 36 is mounted) and an anchor 96, the orifice being sized and shaped to receive the retention member 36 (see figures 2 and 3) such that a portion of the retention member 36 can be inserted into the orifice to form an interference fit, thereby mechanically supporting the flex cable assembly; and a printed circuit board (PCB) 22 having a second connector 44 and a shaft 98, the second connector 44 being sized and shaped to electrically interconnect with the first connector 52, the shaft 98 being rotatably mounted to the PCB 22 and having a distal end configured to engage the anchor 96 of the support structure 42 such that, as the distal end of the shaft 98 engages the anchor 96 and the shaft 98 is rotated, the second connector 44 is aligned with and moved toward mating engagement with the first connector 52.

In regard to claim 2, Daughtrey discloses that the PCB 22 has a first shaft mount (first end of 94) and a second shaft mount (second opposed end of 94) spaced therefrom, each shaft mount defining an orifice through which the shaft 98 extends.

In regard to claim 3, Daughtrey discloses that the anchor 96 defines an orifice and the distal end of the shaft 98 is sized and shaped to engage within the orifice.

In regard to claim 7, Daughtrey discloses that the second connector 44 is mounted to the PCB 22 adjacent to the distal end of the shaft 98.

In regard to claim 8, Daughtrey discloses that the retention member 36 and orifice (a portion of 28 where 36 is mounted, see figures 2 and 3) are sized and shaped to permit movement of the retention member 36 when engaged in the interference fit.

In regard to claim 16, Daughtrey discloses a system comprising: a chassis 42 having an anchor 92; a flex cable assembly sized and shaped to be mounted at least partially within the chassis 42, the assembly having a flex cable 34, a first connector 52, the first connector 52 being attached to and electrically interconnected with a first end of the flex cable 34; and an electronic component 22 sized and shaped to be mounted at least partially within the chassis 42, the electronic component 22 having a second connector 44 and a shaft 98, the second connector 44 being sized and shaped to electrically interconnect with the first connector 52 of the flex cable assembly, the shaft 98 being rotatably mounted to the electronic component 22 and having a distal end configured to engage the anchor 92 of the chassis 42 such that, as the distal end of the

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shaft 98 engages the anchor 92 and the shaft 98 is rotated, the second connector 44 is aligned with and moved toward mating engagement with the first connector 52.

In regard to claim 17, Daughtrey discloses that the anchor 92 defines an internally-threaded orifice 96 and the distal end of the shaft 98 is externally threaded.

In regard to claim 18, Daughtrey discloses that the electronic component 22 is a printed circuit board.

In regard to claim 19, Daughtrey discloses that the assembly has a retention member 36 extending outwardly from the flex cable 34; and wherein the chassis 42 defines an orifice, the orifice being sized and shaped to receive the retention member 36 such that a portion of the retention member 36 can be inserted into the orifice to form an interference fit, thereby mechanically supporting the first end of the flex cable 34 with respect to the chassis 42 (see figures 2 and 3).

5. Claims 22-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Hamlin (5,730,619).

In regard to claim 22, Hamlin discloses a system for electrically interconnecting components, the components being mounted within a structure, the system comprising: a flex cable 11 having a first end 40 and a second end; a first connector 15 attached to and electrically communicating with the first end of the flex cable 11; a second

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connector (not shown, it is inherent) attached to and electrically communicating with the second end of the flex cable 11; and means for supporting the first end of the flex cable 11 such that the first connector 15 is positioned for electrically engaging a first connector 14 of the components 12.

In regard to claim 23, Hamlin discloses a method for electrically interconnecting components comprising: providing a flex cable 11 having a connector 15 attached to a first end 40 thereof; providing a support structure 20; and forming an interference fit between the support structure 20 and a portion of the flex cable 11 such that the first end 40 of the flex cable 11 is supported by the support structure 20.

In regard to claim 24, Hamlin discloses that after forming the interference fit, the first end 40 of the flex cable 11 is able to move with respect to the support structure 20.

In regard to claim 25, Hamlin discloses a step of providing a component 10; and electrically interconnecting the component 10 with the connector 15 of the flex cable 11.

In regard to claim 26, Hamlin discloses a step of electrically interconnecting the component 10, the component 10 is blind-mated to the flex cable 11.

In regard to claim 27, Hamlin discloses that the support structure 20 and the component 10 each have an alignment feature 22, 44; and wherein, in electrically



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interconnecting the component 10 and the flex cable 11, the alignment feature 44 of the component 10 is engaged with the alignment feature 22 of the support structure 20.

***Conclusion***

6. This is a continuation of applicant's earlier Application No. 10/308,533. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.



**THO D. TA**  
**PRIMARY EXAMINER**

tdt  
February 24, 2004